

BOTANY.—*The application of the generic name Achyranthes.*<sup>1</sup>  
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The generic name *Achyranthes* was applied by Linnaeus in 1753 to a group of plants now placed in the family *Amaranthaceae*. Linnaeus' genus included several species which are now referred to three genera, only two of which need receive consideration here. When, in working recently with the *Amaranthaceae* for the North American Flora, it became necessary to determine the type species of the genus, the writer was much surprised to find it to be *Achyranthes repens* L., a plant usually referred to *Alternanthera*, a member of the tribe *Gomphreneae*. *Achyranthes* has commonly been applied to a quite different group of species, of the tribe *Achyrantheae*. It thus becomes necessary to reapply it in a sense historically correct, and to substitute another name for the *Achyranthes* of recent authors.

It is unfortunate that the name *Achyranthes* must be used in a sense other than that in which it has generally been employed in recent years. The earlier botanists, however, placed most of the species of *Alternanthera* in *Achyranthes*, so that at least those botanists who urge the use of generic names according to their original application cannot complain of the changes now introduced. There seems, moreover, to be no doubt as to the type of the genus *Achyranthes*, under the American Code of nomenclature. Linnaeus' genera of the *Species Plantarum* are to be typified by the citations in the *Genera Plantarum* of 1754. In that work we find under the name *Achyranthes* a single citation,—*Achyraacantha* Dill. *Elth. pl. 7, f. 7*. This illustration is cited by Linnaeus under *Achyranthes repens*, which species thus becomes the type of the genus. Furthermore, the generic description given by Linnaeus applies better to this plant than to those lately referred to *Achyranthes*. In all the editions of the *Genera Plantarum* the Dillenian citation is the only one listed. On the other hand, *Stachyarpagophora* Vaill., which is *Achyranthes* as recently accepted, is cited by Linnaeus under *Celosia*.

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Linnaeus himself was responsible for the later misinterpretation of *Achyranthes*, for in 1762 he transferred *A. repens* to the genus *Illecebrum*, renaming it *Illecebrum achyrantha*; a procedure which, however, does not change the nomenclatorial type of *Achyranthes*. He was the first, apparently, to apply the name *Achyranthes* to the group of plants of which *Achyranthes aspera* is typical, a group which other writers had referred to *Amaranthus*.

*Achyranthes*, as here delimited, has several synonyms. *Alternanthera* Forsk. (1775) was the first published. Others are: *Allaganthera* Mart. (1814), *Pityranthus* Mart. (1817), *Telanthera* R. Br. (1818), *Brandesia* Mart. (1826), *Mogiphanes* Mart. (1826), *Bucholzia* Mart. (1826), and *Steiremis* Raf. (1836). *Telanthera* was maintained by many authors until recently, being applied to the tall perennial species with pedunculate inflorescence. If maintained at all, it could only be on these habitual characters. Some authors have attempted to separate it upon the length of the stamen tube, amending the genus so as to include some of the low annual plants with sessile inflorescence; but when this has been done *Telanthera* has included just as diverse elements as the genus *Achyranthes* as here defined. The form of the stamen tube and the length of the pseudostaminodia are not good generic characters, for all intermediate forms can be found in species that are evidently of the closest relationship. The genus *Mogiphanes* has some claims to generic rank. It includes those species in which the flowers are manifestly pedicellate inside the bractlets; but this character seems only relative, when some of the species of other groups are examined.

The published species of *Achyranthes* which come within the range of the North American Flora are the following: *Achyranthes axillaris* Hornem. (*Alternanthera spinosa* R. & S.); **A. leiantha** (*Alternanthera pungens* H. B. K., 1817, not *Achyranthes pungens* Lam., 1783; *Alternanthera achyrantha leiantha* Seub., 1875); *A. repens* L.; *A. polygonoides* (L.) Lam.; *A. sessilis* (L.) Steud., 1840, as synonym; **A. martiniensis** (*Telanthera martinicensis* Moq., 1849); **A. portoricensis** (*Alternanthera portoricensis* Kuntze, 1891); **A. watsoni** Standley, nom. nov. (*Telanthera stellata* S. Wats., 1886, not *Achyranthes stellata* Willd., 1797);

*A. ficoidea* (L.) Lam.; *A. halimifolia* Lam.; **A. maritima** (*Alternanthera maritima* St. Hil., 1823); **A. obovata** (*Bucholzia obovata* Mart. & Gal., 1843); **A. urbani** Standley, nom. nov. (*Alternanthera geniculata* Urban, 1912, not *Telanthera geniculata* S. Moore, 1895); **A. olivacea** (*Telanthera olivacea* Urban, 1899); **A. philoxeroides** (*Bucholzia philoxeroides* Mart., 1826); **A. mexicana** (*Brandesia mexicana* Schlecht. & Cham., 1832); **A. pycnantha** (*Brandesia pycnantha* Benth., 1844); **A. gracilis** (*Gomphrena gracilis* Mart. & Gal., 1843); **A. jacquini** (*Mogiphanes jacquini* Schrad., 1834); **A. ramosissima** (*Mogiphanes ramosissima* Mart., 1826); **A. brasiliana** (*Gomphrena brasiliana* L., 1756); **A. costaricensis** (*Alternanthera costaricensis* Kuntze, 1891).

The following are some of the better known South American species of *Achyranthes* which have been described under other generic names: **Achyranthes albida** (*Telanthera albida* Moq., 1849); **A. aphylla** (*Alternanthera aphylla* Glaziov, 1911); **A. bangii** (*Telanthera bangii* Rusby, 1896); **A. bastosiana** (*Alternanthera bastosiana* Glaziov, 1911); **A. boliviana** (*Alternanthera boliviana* Rusby, 1895); **A. chacoensis** (*Alternanthera chacoensis* Morong, 1893); **A. cyclophylla** (*Telanthera cyclophylla* Seub., 1875); **A. echinocephala** (*Brandesia echinocephala* Hook. f., 1847); **A. elongata** (*Gomphrena elongata* Willd., 1819); **A. hookeri** Standley, nom. nov. (*Bucholzia filifolia* Hook. f., 1847, not *Achyranthes filifolia* Willd., 1819); **A. flavicoma** (*Telanthera flavicoma* Anderss., 1854); **A. frutescens** (*Illecebrum frutescens* L'Her., 1785); **A. galapagensis** (*Telanthera galapagensis* Stewart, 1911); **A. geniculata** (*Telanthera geniculata* S. Moore, 1895); **A. glaucescens** (*Bucholzia glaucescens* Hook. f., 1847); **A. hassleriana** (*Alternanthera hassleriana* Chod., 1903); **A. helleri** (*Telanthera helleri* Robinson, 1902); **A. lehmannii** (*Alternanthera lehmannii* Hieron, 1895); **A. lorentzii** (*Alternanthera lorentzii* Uline, 1899); **A. martii** (*Telanthera martii* Moq., 1849); **A. microphylla** (*Alternanthera microphylla* R. E. Fries, 1905); **A. minutiflora** (*Telanthera minutiflora* Seub., 1875); **A. morongii** (*Alternanthera morongii* Uline, 1899); **A. nodifera** (*Telanthera nodifera* Moq., 1849); **A. nudicaulis** (*Bucholzia nudicaulis* Hook. f., 1847); **A. pilosa** (*Alternanthera pilosa* Moq., 1849); **A. pinheirensis** (*Alternanthera pinheirensis* Glaziov, 1911); **A. praelonga** (*Alternanthera praelonga* St. Hil., 1823); **A. puberula** (*Brandesia puberula* Mart., 1826); **A. reineckii** (*Alternanthera reineckii* Briq., 1899); **A. rigida** (*Alternanthera rigida* Rob. & Greenm., 1895); **A. paraguayensis** Standley, nom. nov. (*Mogiphanes rosea* Morong, 1893, not *Achyranthes rosea* Spreng., 1827); **A. rufa** (*Brandesia rufa* Mart., 1826); **A. rugelii** (*Telanthera rugelii* Seub., 1875); **A. rugulosa**

(*Telanthera rugulosa* Robinson, 1902); **A. snodgrassii** (*Telanthera snodgrassii* Robinson, 1902); **A. strictiuscula** (*Telanthera strictiuscula* Anderss., 1854); **A. seubertii** Standley, nom. nov. (*Alternanthera tomentella* Seub., 1875, not *Achyranthes tomentella* Zipp., 1841); **A. vestita** (*Telanthera vestita* Anderss., 1854).

Since the generic name *Achyranthes* is to be used in the sense above indicated, another name must be used for the genus which has been passing under that name. The oldest synonym cited by Dalle Torre and Harms under *Achyranthes* is *Amaranthulus* Heist., 1763. This, however, was cited by Fabricius<sup>2</sup> merely as a synonym, hence is not available. *Centrostachys* was published by Wallich<sup>3</sup> in 1824. The type species is *C. aquatica* Wall. Moquin considered the genus distinct from his *Achyranthes*, but later authors have merged it in the latter genus. The included species seem to the writer to be congeneric with *Achyranthes* as defined by Moquin and more recent writers, and the name *Centrostachys* may, therefore, stand for the genus. Rafinesque subsequently (1836) proposed the name *Cadelaria* for this group and that name would be a very appropriate one, for it was used in pre-Linnaean botany. Another pre-Linnaean name, *Stachyarpagophora* of Vaillant, was restored by Dr. Maza in 1897,<sup>4</sup> but fortunately, because of the cumbrousness of the word, it is invalidated by the two earlier names which were properly published.

Two species of *Centrostachys* occur in North America: **C. indica** (*Achyranthes aspera indica* L., 1753; *A. obtusifolia* Lam., 1783), and **C. aspera** (*Achyranthes aspera* L., 1753).

A large number of other species of *Centrostachys* occur in the Old World, chiefly in Africa and the East Indies. The following new binomials should be made for some of the better known of these: **Centrostachys abyssinica** (*Achyranthes abyssinica* Nees, 1850); **C. alba** (*Brandesia alba* Mart., 1840); **C. angustifolia** (*Achyranthes angustifolia* Benth., 1849); **C. arborescens** (*Achyranthes arborescens* R. Br., 1810); **C. australis** (*Achyranthes australis* R. Br., 1810); **C. avicularis** (*Achyranthes avicu-*

<sup>2</sup> Enum. Pl. Hort. Helms. ed. 2, 358.

<sup>3</sup> In Roxb. Fl. Ind. 2: 497.

<sup>4</sup> Fl. Haban. 92.

*laris* E. Mey., 1849); **C. bidentata** (*Achyranthes bidentata* Blume, 1825); **C. breviflora** (*Achyranthes breviflora* Baker, 1897); **C. canescens** (*Achyranthes canescens* R. Br., 1810); **C. carsoni** (*Achyranthes carsoni* Baker, 1897); **C. conferta** (*Achyranthes conferta* Schinz, 1896); **C. elegantissima** (*Achyranthes elegantissima* Schinz, 1895); **C. fasciculata** (*Achyranthes fasciculata* Schweinf., 1867); **C. flabellifera** (*Achyranthes flabellifera* Boerl., 1891); **C. fruticosa** (*Achyranthes fruticosa* Lam., 1783); **C. grandifolia** (*Achyranthes grandifolia* Moq., 1849); **C. heudelotii** (*Achyranthes heudelotii* Moq., 1849); **C. involucrata** (*Achyranthes involucrata* Moq., 1849); **C. schinzii** Standley, nom. nov. (*Achyranthes lanuginosa* Schinz, 1895, not *A. lanuginosa* Nutt., 1820); **C. mauritiana** (*Achyranthes mauritiana* Moq., 1849); **C. moquini** Standley, nom. nov. (*Achyranthes javanica* Moq., 1849, not *A. javanica* Pers., 1805); **C. oblanceolata** (*Achyranthes oblanceolata* Schinz, 1895); **C. ovata** (*Achyranthes ovata* Ehrenb., 1867); **C. schweinfurthii** (*Achyranthes schweinfurthii* Schinz, 1896); **C. splendens** (*Achyranthes splendens* Mart., 1849); **C. velutina** (*Achyranthes velutina* Hook. & Arn., 1841); **C. welwitschii** (*Achyranthes welwitschii* Schinz, 1895).

ZOOLOGY.—*The bathymetrical distribution of the Arctic and Antarctic crinoids.*<sup>1</sup> AUSTIN H. CLARK, National Museum.

In their bathymetrical distribution the crinoids of the Arctic and Antarctic Oceans are most interesting. I have already<sup>2</sup> presented the reasons for considering the crinoids of the Atlantic, from the standpoint of their systematic interrelationships, and of their geographical distribution, as representing merely the fauna of an inland sea, derived from the fauna of the Indo-Pacific as a parent, the crinoids of the Arctic Ocean representing also an inland sea fauna derived in part from the Bay of Bengal direct, and in part from the adjacent portion of the Atlantic. The fauna of the Antarctic Ocean is merely the southerly extension of the deep water fauna of the Indo-Pacific Ocean.

Examining the diagram (fig. 1), we find that the line representing the Antarctic fauna, and that representing the Antarctic and the Arctic faunas combined, are strikingly similar to the line

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<sup>2</sup> Internationale Revue der gesamten Hydrobiologie und Hydrographie, 1914.